

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (Amended) A method of fabricating substrates, the method comprising
providing a substrate comprising a film of material characterized by a non-uniform surface, the non-uniform surface including a plurality of defects, at least some of the defects being of a size ranging from about 100 Angstroms and greater; and
applying a combination of a deposition species for deposition of a deposition material and an etching species for etching an etchable material during a portion of time that the non-uniform surface is subjected to the etching, the combination of the deposition species and the etching species contacting the non-uniform surface in a thermal setting to reduce a level of non-uniformity of the non-uniform surface by filling a portion of the defects to smooth the film of material, the film of material being substantially free from the defects and being characterized by a surface roughness of a predetermined value.
2. (Original) The method of claim 1 wherein said thermal setting increases a temperature of said non-uniform surface to about 1,000 Degrees Celsius and greater.
3. (Original) The method of claim 2 wherein said temperature increases is about 10 Degrees Celsius per second and greater.
4. (Original) The method of claim 2 wherein said temperature increases is about 20 Degrees Celsius per second and greater.
5. (Previously Presented) The method of claim 1 wherein said non-uniform surface comprises a plurality of particles therein, the particles comprising a hydrogen bearing species.
6. (Original) The method of claim 5 wherein said plurality of particles are derived from hydrogen gas during an implantation process.

7. (Original) The method of claim 1 wherein said predetermined value is less than about two nanometers root mean square.
8. (Original) The method of claim 1 wherein said predetermined value is less than about 1 nanometers root mean square.
9. (Original) The method of claim 1 wherein said predetermined value is less than about 0.1 nanometer root mean square.
10. (Original) The method of claim 1 wherein said etching species comprise a hydrogen bearing compound.
11. (Previously Presented) The method of claim 1 wherein said etching species comprise a halogen bearing compound.
12. (Previously Presented) The method of claim 1 wherein said etching species comprise a fluorine bearing compound.
13. (Original) The method of claim 12 wherein said fluorine bearing compound is selected from SF₆, CF₄, NF₃, and CCl₂F₂.
14. (Original) The method of claim 1 wherein said deposition species comprise a silane bearing gas.
15. (Original) The method of claim 1 wherein said deposition species comprise a silicon bearing species.
16. (Previously Presented) The method of claim 1 wherein said deposition species comprise a species selected from SiH₄, SixClyHz, and SiClx.
17. (Original) The method of claim 1 wherein the non-uniform surface is a cleaved surface, the cleaved surface being made from a process selected from a controlled cleaving action, a Smart Cut™ process, or an ELTRAN™ process.

18. (Original) The method of claim 1 wherein the defects are called HF defects.
19. (Amended) The method of claim 1, wherein the substrate is a silicon substrate having [(100)] a single crystal orientation.
20. (Previously Presented) A method of fabricating substrates, the method comprising providing a substrate comprising a film of material with a non-uniform surface, the non-uniform surface including a plurality of defects, at least some of the defects being 100 Angstroms or greater; and
applying simultaneously to the non-uniform surface a combination of a silicon-containing-deposition species for deposition of a deposition material and a halogen-containing-etching species for etching an etchable material in order to smooth the surface.
21. (Amended) The method of claim 20, wherein the combination of the deposition species and the etching species are contacting the non-uniform surface placed in a thermal setting of a temperature of about 1,000 degrees Celsius or greater.
22. (Amended) A method of fabricating substrates, the method comprising providing a silicon substrate comprising a film of material with a non-uniform surface, the non-uniform surface including a plurality of defects, at least some of the defects being 100 Angstroms or greater, the silicon substrate having [(100)] a single crystal orientation, the non-uniform surface including particles derived from hydrogen gas during an implantation process; and
applying simultaneously to the non-uniform surface a combination of a silicon-containing-deposition species for deposition of a deposition material and a halogen-containing-etching species for etching an etchable material in order to smooth and reduce a level of non-uniformity of the non-uniform surface, the halogen-containing-etching species including HCl.